

## **REMARKS**

This responds to the office action mailed April 21, 2003 in connection with the above identified patent application. Prior to entry of this amendment, claims 1-41 were pending in the application. Claim 30-41 were previously withdrawn and have now been canceled. Claim 1 has been canceled and claims 2-29 have been amended. New claims 41 and 42 have been presented for examination.

### **Claim Rejection - 35 U.S.C. 112**

Claims 1-29 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 has been canceled and new claim 42 has been presented. Claim 42 contains subject matter originally found in claim 1 and clearly defines a dental unit. New independent claim 42 is directed to a dental unit having an apparatus for detecting biofilm as recited therein.

Claims 2-4 have been amended to specify that the detection means are of the direct detection type and that the detection means are adapted to detect an alteration in the biofilm caused by the fluid reagent. Such alteration could cause the coloration of the biofilm to change or an alteration of the electrical parameters of the biofilm.

Claim 5 has been amended to delete the portion deemed by the Examiner to be indefinite.

In claims 10, 13 and 28, the dependencies have been corrected in order to overcome the Examiner's rejections regarding lacking of antecedent basis.

### **Claim Rejection - 35 U.S.C. 103**

Claims 1, 10 and 23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over either Banks et al. (EP 0 531 067) or Siebel et al. (US 4,912,332) in view of Fitton (US 6,106,771).

Claims 2-4, 6, 7 and 11-20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over either Banks et al. (EP 0 531 067) or Siebel et al. (US 4,912,332) in view of Fitton (US 6,106,771) and taken further in view of Tuompo et al. (US 5,910,420).

Claims 5, 25, 26 and 27 were rejected under 35 U.S.C. § 103(a) as being unpatentable over either Banks or Siebel in view of Fitton and taken further in view of Schapira et al. (US 5,249,874).

Claim 1 has been deleted and new claim 42 has been submitted for examination and is deemed to define patentably over the documents cited by the Examiner as noted above. In particular, the subject matter of new claim 42, which includes the technical features of original claim 1 and other features disclosed in the specification, is not disclosed or suggested by Banks, Siebel, Fitton, Tuompo, or any combination thereof. Specifically, the devices for detecting the presence of biofilm, disclosed by Siebel and Banks are not adapted to detect the reaction between the biofilm and the fluid reagent. Indeed, the detecting devices of Banks and Siebel are adapted to sense the presence of the biofilm, itself, in the conduit and not the reaction between the biofilm and the reagent fluid. Moreover, it is respectfully noted that Tuompo does not teach to use the reagent fluid in order to detect the biofilm.

In contrast, the Applicant's apparatus as defined in new claim 42 comprises **means for detecting the reaction between the biofilm and the fluid reagent**. Therefore, the combination of Fitton with Banks or Siebel and Tuompo et al. does not produce the claimed subject matter of claim 42. Indeed, it is noted that, **the detecting device of Siebel or Banks would not be able to detect the reaction between the biofilm and a reagent fluid, i.e., neither Siebel nor Banks disclose or suggest any technical feature for detecting a reaction between a reagent and a biofilm.**

Furthermore, since Tuompo does not disclose use of the fluid reagent for the detection of the biofilm, it is not obvious to use the detecting device of Banks or Siebel to detect the reaction between the biofilm and the fluid.


The solution claimed in new claim 42 has the important advantage of facilitating the detecting of the biofilm by way of a reaction with a fluid reagent that alters the chemical and physical characteristics of the biofilm in such a way to simplify detection of the biofilm. For example, the biofilm reacted with the fluid reagent is more visible if the reaction results in coloration of the biofilm, and the apparatus for detecting the biofilm can easily detect also the little pieces of biofilm.

For these reasons, applicant points out that new claim 42 is not obvious in view of the prior art cited by the Examiner. Moreover, applicant points out that since claims 2-29 depend directly and indirectly upon and contain all the limitation of patentable claim 42, they are submitted to be patentable along with new claim 42. New claim 43 is also submitted to be in condition for allowance.

### **Conclusion**

Applicant respectfully requests the entry of this amendment, the Examiner's reconsideration of the application, and the timely allowance of the pending claims. Applicants' counsel remains ready to assist the Examiner in any way to facilitate and expedite the prosecution of this application.

Respectfully submitted,



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